

Waves, Winds, and Currents Practice Exam Answer Sheet

NAME: _____

DATE: _____ PERIOD: _____

Grade: ____/35

Grade (%): ____%

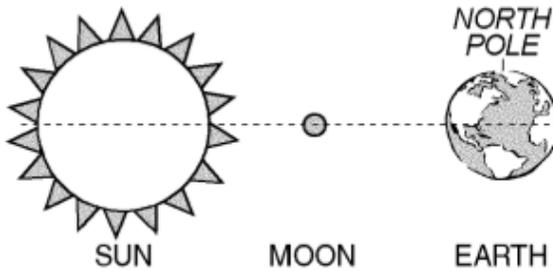
PART ONE: MULTIPLE CHOICES

- | | | | |
|----------|-----------|-----------|-----------|
| 1. _____ | 9. _____ | 17. _____ | 25. _____ |
| 2. _____ | 10. _____ | 18. _____ | 26. _____ |
| 3. _____ | 11. _____ | 19. _____ | 27. _____ |
| 4. _____ | 12. _____ | 20. _____ | 28. _____ |
| 5. _____ | 13. _____ | 21. _____ | 29. _____ |
| 6. _____ | 14. _____ | 22. _____ | 30. _____ |
| 7. _____ | 15. _____ | 23. _____ | |
| 8. _____ | 16. _____ | 24. _____ | |

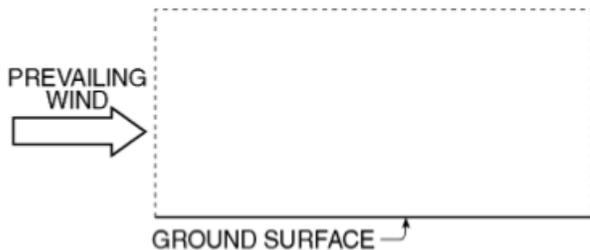
PART TWO: SHORT ANSWERS

31. _____

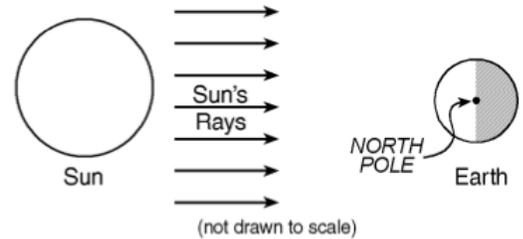
32. _____



33.



34.



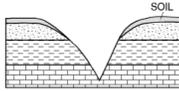
35.

NOTE: ALL QUESTIONS ON THIS PRACTICE TEST ARE OLD REGENTS QUESTIONS TAKEN FROM PREVIOUS EARTH SCIENCE REGENTS EXAMINATIONS

Waves, Wind, and Currents Practice Exam

NAME: _____ DATE: _____ PERIOD: _____

1. The cross section below shows a V-shaped valley and the bedrock beneath the valley.



Which agent of erosion is responsible for cutting *most* V-shaped valleys into bedrock?

- A) glacial ice
- B) running water
- C) surface winds
- D) ocean waves

2. Outwash plains are formed as a result of deposition by

- A) ocean waves
- B) meltwater from glaciers
- C) landslides
- D) winds from hurricanes

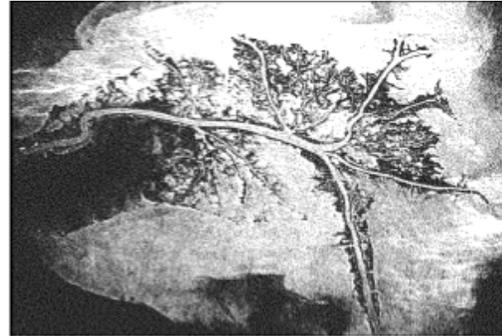
3. The occurrence of parallel scratches on bedrock in a U-shaped valley indicates that the area has most likely been eroded by

- A) a glacier
- B) a stream
- C) wind
- D) waves

4. Surface winds on Earth are primarily caused by differences in

- A) air density due to unequal heating of Earth's surface
- B) rotational speeds of Earth's surface at various latitudes
- C) ocean wave heights during the tidal cycle
- D) distances from the Sun during the year

5. The satellite photograph below shows a geologic feature composed of silt, sand, and clay.



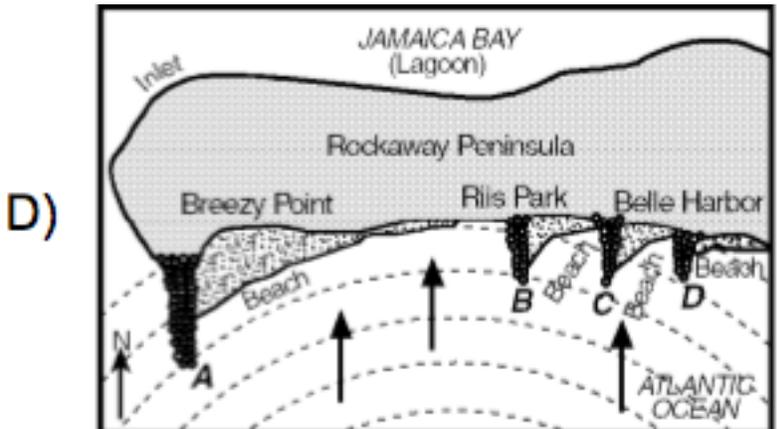
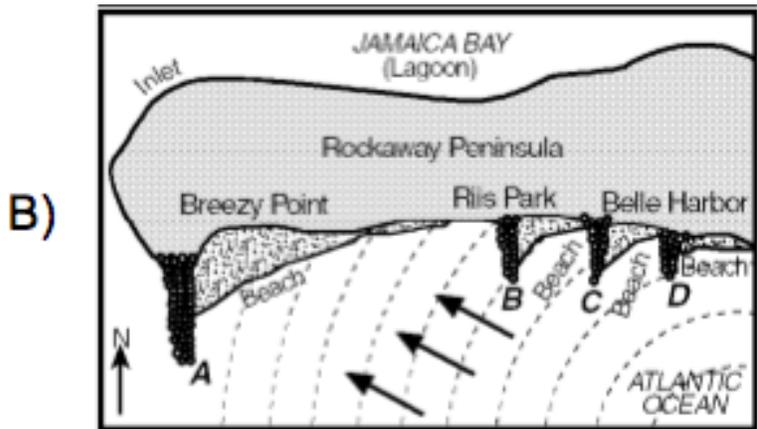
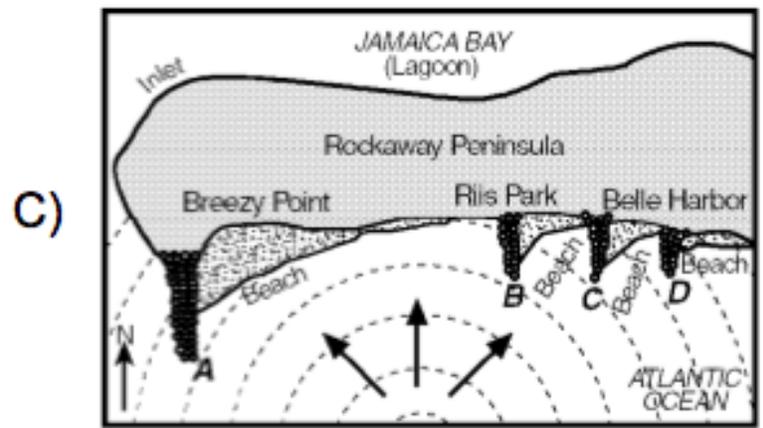
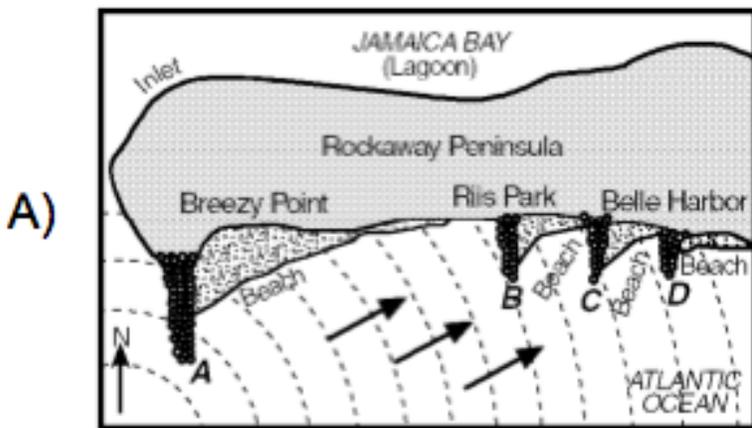
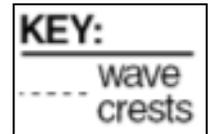
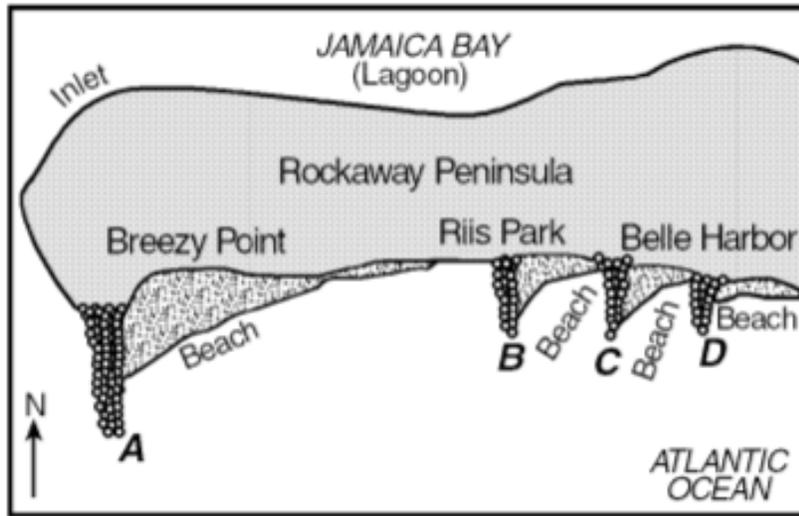
Which agent of erosion primarily deposited the geologic feature shown in the photograph?

- A) wind
- B) running water
- C) glaciers
- D) wave action

6. The long, sandy islands along the south shore of Long Island are composed mostly of sand and rounded pebbles arranged in sorted layers. The agent of erosion that most likely shaped and sorted the sand and pebbles while transporting them to their island location was

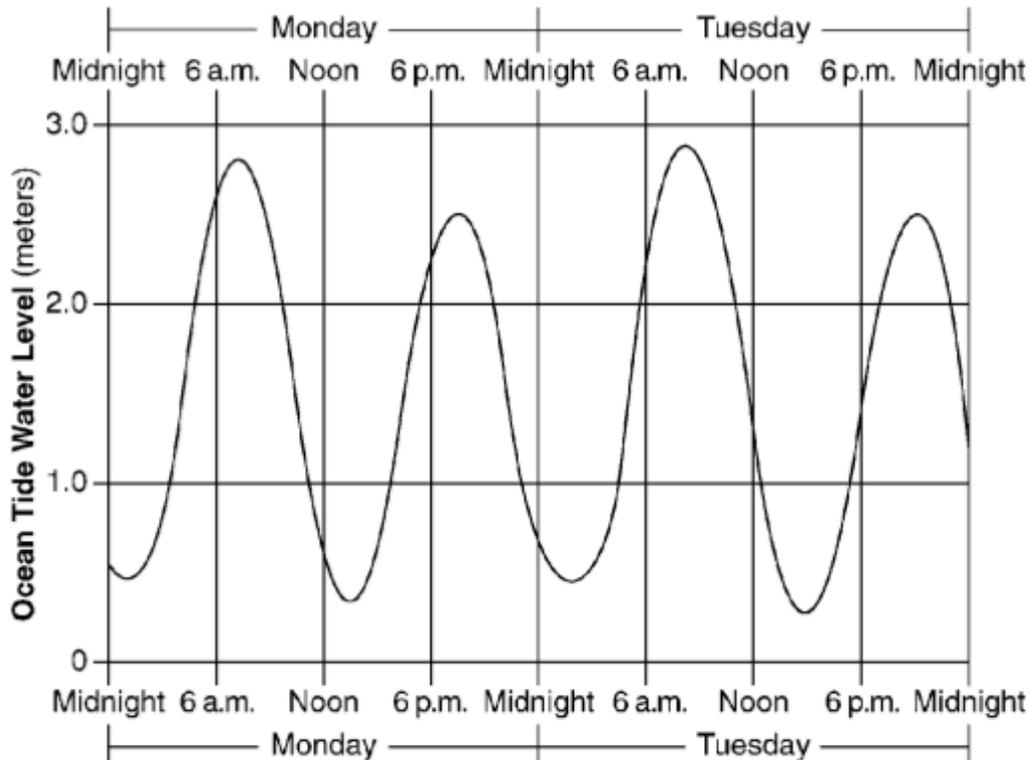
- A) glaciers
- B) ocean waves
- C) wind
- D) landslides

7. The map below shows Rockaway Peninsula, part of Long Island's south shore, and the location of several stone barriers, A, B, C, and D, that were built to trap sand being transported along the coast by wave action.



Questions 8 through 10 refer to the following.

The graph below shows the water levels of ocean tides measured in Boston, Massachusetts, for a 2-day period.



8.

The given graph shows that high tides at Boston occur approximately every

- A) 12.5 hours B) 3.5 hours C) 16.0 hours D) 6.0 hours

9. If the trends shown by the graph continue, which statement *best* describes the next low tide at Boston that is expected to occur on Wednesday?

- A) It will occur about 10 p.m. with a 2.8-meter water level.
 B) It will occur about 3 a.m. with a 0.4-meter water level.
 C) It will occur about 6 a.m. with a 0.6-meter water level.
 D) It will occur about 9 p.m. with a 2.6-meter water level.

10. The gravitational pull of the Moon has the greatest influence on the water levels of Earth's ocean tides. If the distance between the Moon and Earth were to *decrease* steadily for the week following the time shown on the graph, which water-level changes would be expected to occur?

- A) Both high tides and low tides would get lower.
 B) High tides would get higher and low tides would get lower.
 C) High tides would get lower and low tides would get higher.
 D) Both high tides and low tides would get higher.

11. A student recorded the times of three successive high tides at one location as:

9:12 a.m.

9:38 p.m.

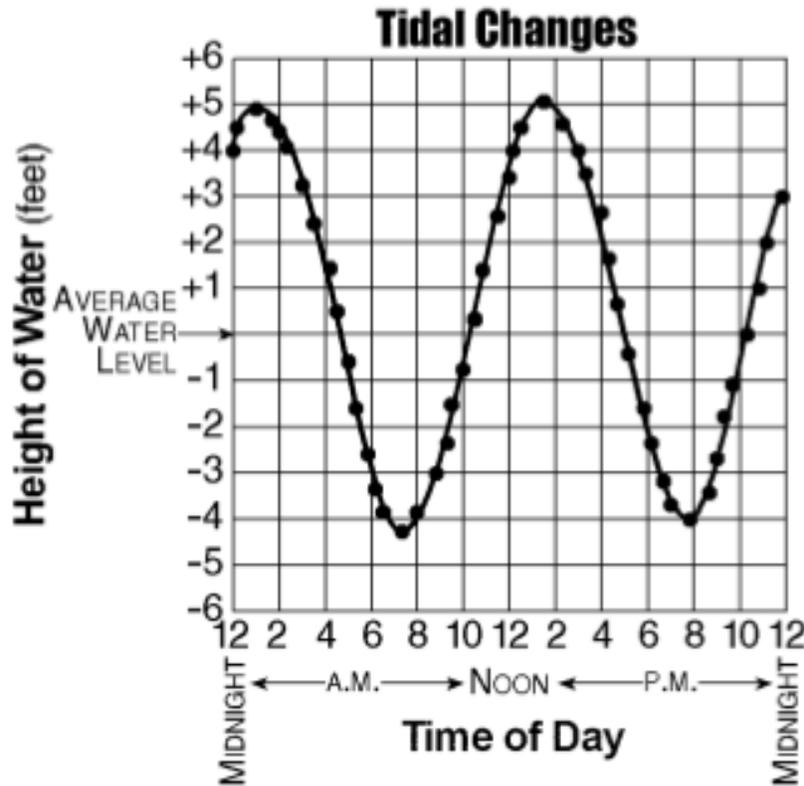
10:04 a.m.

What is the approximate time of the next high tide?

- A) 10:30 p.m. B) 10:12 p.m. C) 11:04 p.m. D) 10:38 p.m.

Questions 12 through 13 refer to the following.

The graph below shows the recorded change in water level (ocean tides) at a coastal city in the northeastern United States during 1 day.



12. According to the pattern shown on the given graph, the next high tide will occur on the following day at approximately

- A) 3:15 a.m. B) 12:30 a.m. C) 2:00 a.m. D) 4:00 a.m.

13. Which inference about tides is *best* made from the given graph?

- A) The hourly rate of tidal change is always the same.
 B) The tidal change is cyclic.
 C) The rate of tidal change is greatest at high tide.
 D) The tidal change is a random event.

Question 14 Refers to the Following Paragraphs.

FOSSILIZED JELLYFISH FOUND IN WISCONSIN

Fossil hunters have unearthed the largest collection of fossilized jellyfish ever discovered, including the largest fossilized jellyfish ever found.

The remains of soft-bodied animals, such as jellyfish, are relatively rare because they don't have bones, fossil dealer Dan Damrow, James W. Hagadorn of the California Institute of Technology and Robert H. Dott Jr. of the University of Wisconsin at Madison noted in describing the find in the journal *Geology*.

About a half-billion years ago, during the Cambrian period, the quarry in Mosinee, Wis., where the deposits were found was a small lagoon. The jellyfish apparently died when they were washed up by a freak tide or storm, the researchers said. The jellyfish remains were probably preserved because of a lack of erosion from sea water and wind, and a lack of scavengers, the researchers concluded.

"It is very rare to discover a deposit which contains an entire stranding event of jellyfish," Hagadorn said. "These jellyfish are not just large for the Cambrian, but are the largest jellyfish in the entire fossil record.

-----*Washington Post*, January 2002

14. Which of the following evidence would lead scientists to suspect that a tide or storm had washed up the jellyfish, described in the reading passage, on a beach?

- A) Primitive life existed on land 500 million years ago.
- B) The rock containing the jellyfish fossils has distorted crystal structure.
- C) Large ripple marks were found in the fossil-containing rock layers.
- D) Tree root fossils appear to have been pitted and folded.

15. Ocean tides are *best* described as

- A) predictable and noncyclic
- C) unpredictable and noncyclic
- B) unpredictable and cyclic
- D) predictable and cyclic

16. Where is the most deposition likely to occur?

- A) at the mouth of a river, where it enters an ocean
- B) at a site where glacial ice scrapes bedrock
- C) at the top of a steep slope in a streambed
- D) on the side of a sand dune facing the wind

17. The California Ocean Current, which flows along the west coast of North America, is a

- A) cool current, flowing north
- B) cool current, flowing south
- C) warm current, flowing south
- D) warm current, flowing north

18. Surface ocean currents located at 40° south latitude, 90° west longitude generally flow toward the

- A) southwest
- B) west
- C) southeast
- D) northeast

19. Which surface ocean current transports warm water to higher latitudes?

- A) Falkland Current
- B) Labrador Current
- C) West Wind Drift
- D) Gulf Stream

20. Which interaction between the atmosphere and the hydrosphere causes most surface ocean currents?

- A) evaporation of water from the ocean surface
- B) friction from planetary winds on the ocean surface
- C) cooling of rising air above the ocean surface
- D) seismic waves on the ocean surface

21. Warm water from tropical oceans is carried to northern Europe by the Gulf Stream and the

- A) Brazil Current
- B) Alaska Current
- C) North Atlantic Current
- D) Canaries Current

22. Which ocean current flows northeast along the eastern coast of North America?

- A) North Equatorial
- B) California
- C) Labrador
- D) Gulf Stream

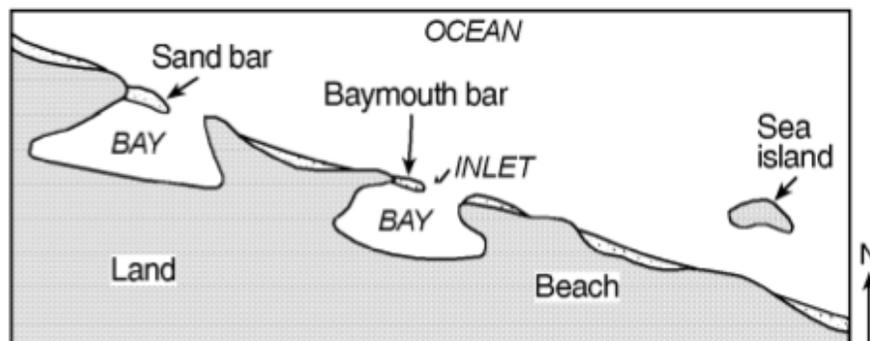
23. Unsorted, angular, rough-surfaced cobbles and boulders are found at the base of a cliff. What most likely transported these cobbles and boulders?

- A) ocean currents
- B) wind
- C) running water
- D) gravity

24. Most of Earth's surface ocean current patterns are primarily caused by

- A) river currents
- B) the force of gravity
- C) the impact of precipitation
- D) prevailing winds

25. The map below shows some features along an ocean shoreline.



In which general direction is the sand being moved along this shoreline by ocean (long-shore) currents?

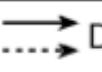
- A) southwest
- B) southeast
- C) northwest
- D) northeast

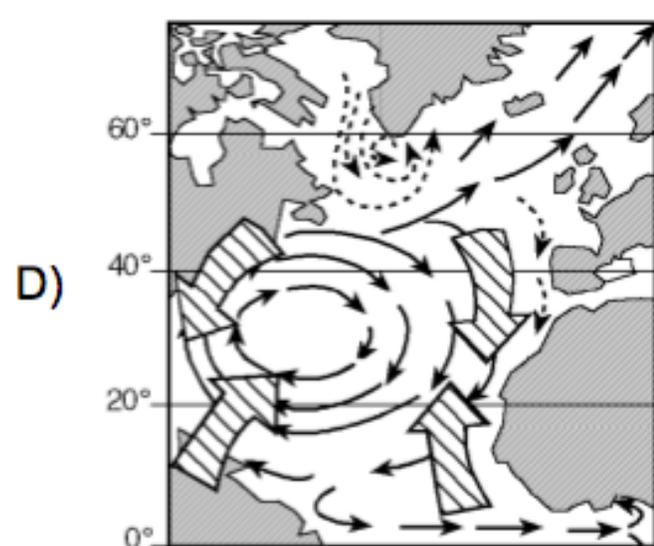
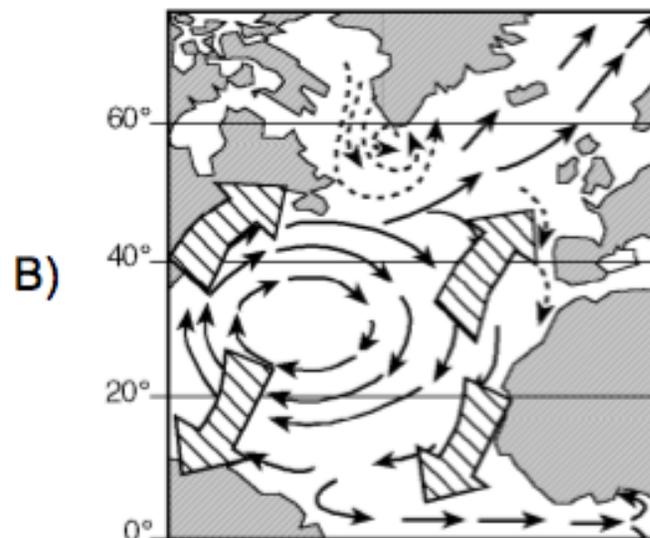
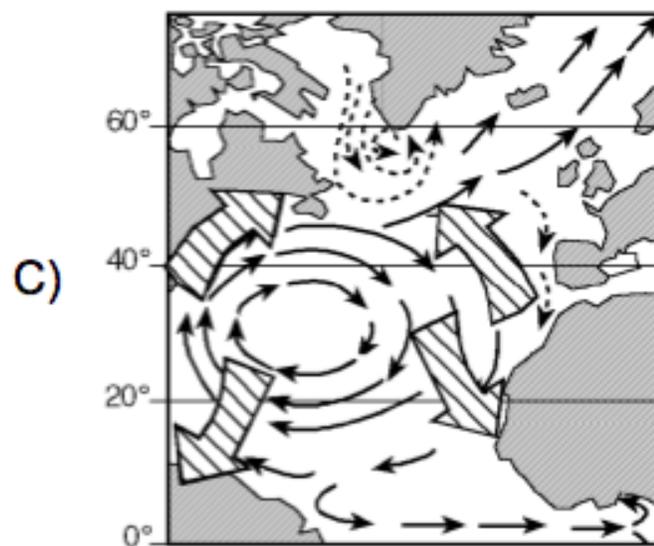
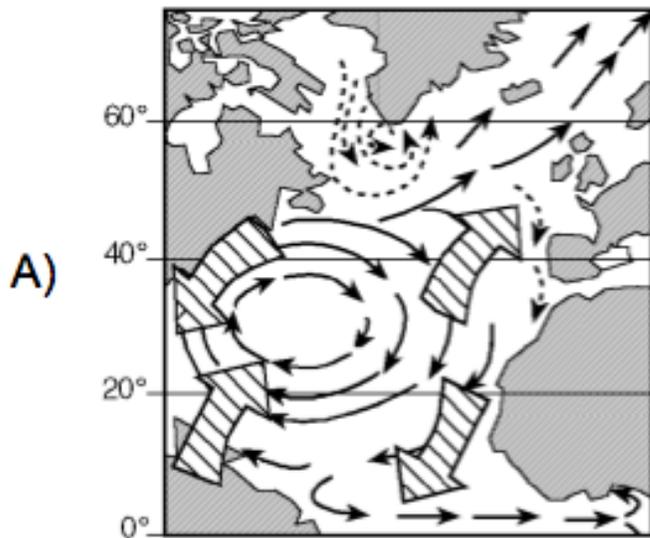
26. Which two ocean currents are *both* warm currents that primarily flow away from the equator?

- A) Alaska Current and Falkland Current
- B) Guinea Current and Labrador Current
- C) Brazil Current and Agulhas Current
- D) Canaries Current and Gulf Stream Current

27. Which map *best* represents the global prevailing surface wind patterns responsible for generating Atlantic Ocean currents?

KEY:

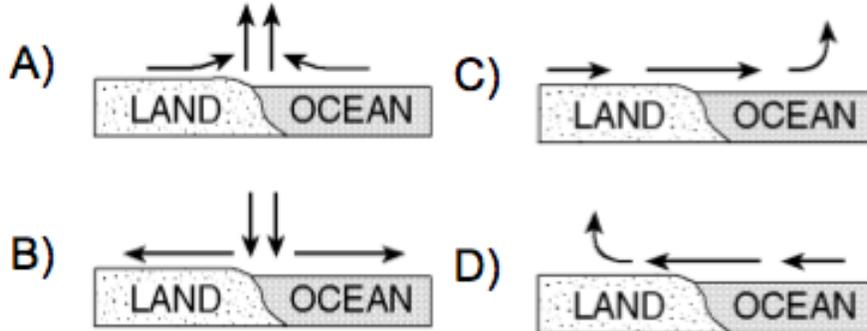
 Direction of global winds  Direction of ocean currents



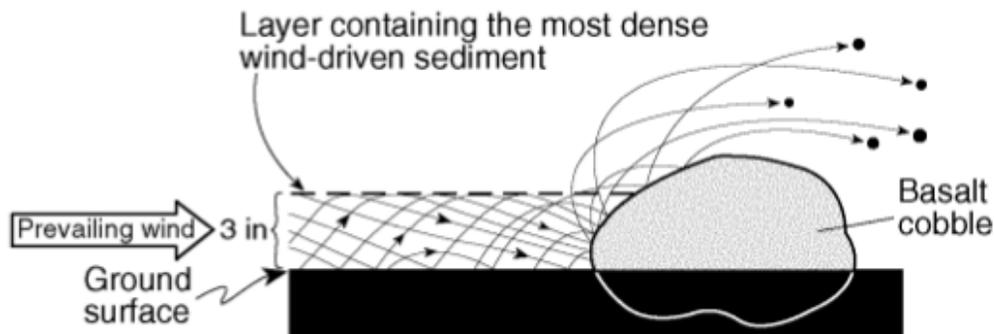
28. The Canaries Current along the west coast of Africa and the Peru Current along the west coast of South America are *both*

- A) cool currents that flow away from the Equator
- B) cool currents that flow toward the Equator
- C) warm currents that flow toward the Equator
- D) warm currents that flow away from the Equator

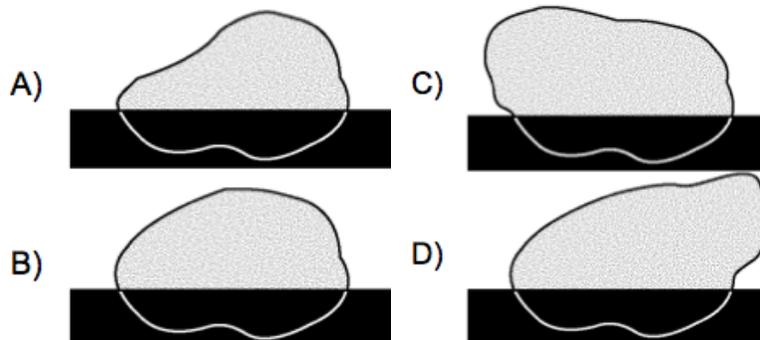
29. Adjacent land and ocean surfaces have the same temperature at sunrise on a clear, calm, summer day. Then the land and water are heated by the Sun for several hours. Which cross section shows the most likely direction of surface winds that will develop at this ocean shore?



30. The cross section below shows the movement of wind-driven sand particles that strike a partly exposed basalt cobble located at the surface of a windy desert.

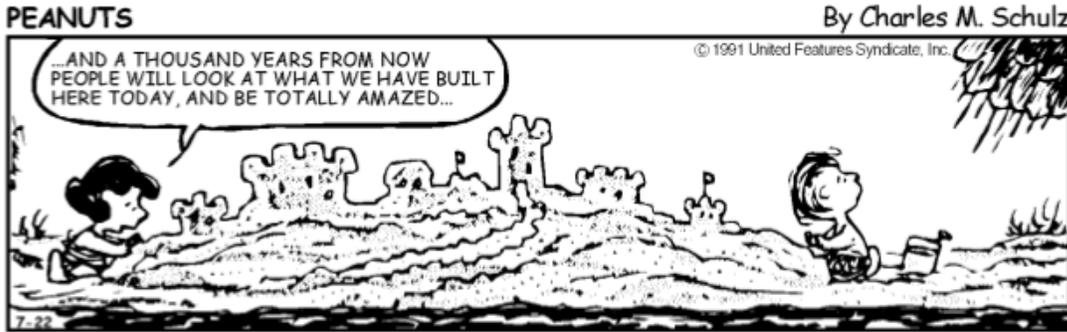


Which cross section *best* represents the appearance of this cobble after many years of exposure to the wind-driven sand?



SHORT ANSWERS

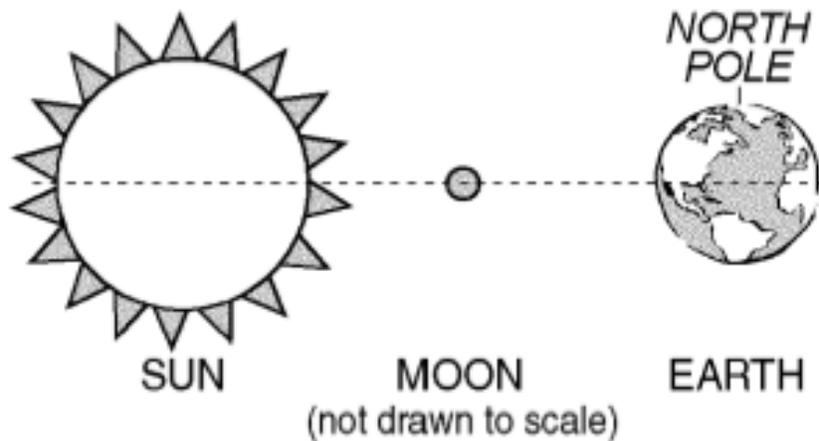
31. The cartoon below shows characters building a sand castle on the edge of an ocean beach.



State *one* reason other than human activity that the sand castle will *not* exist a thousand years from now.

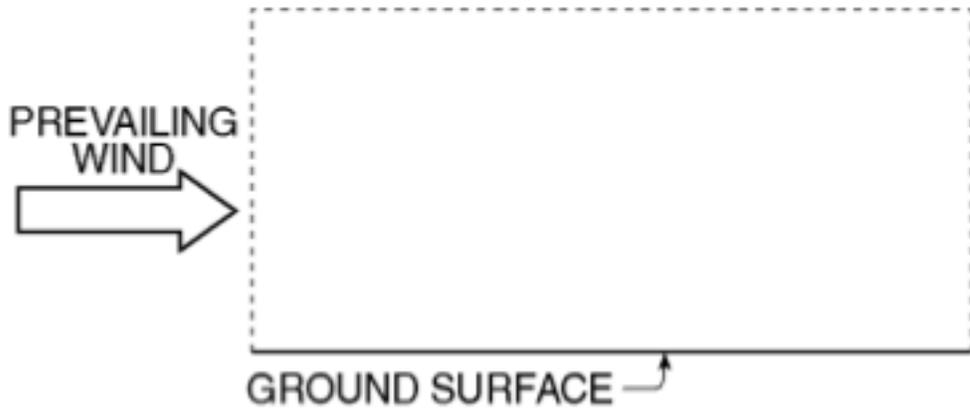
32. Identify by name the surface ocean current that cools the climate of locations on the western coastline of North America

33. The diagram below shows the Sun, the Moon, and Earth in line with one another in space. On the diagram, draw two dots on the surface of Earth to indicate the locations where the *highest* ocean tides are most likely occurring.

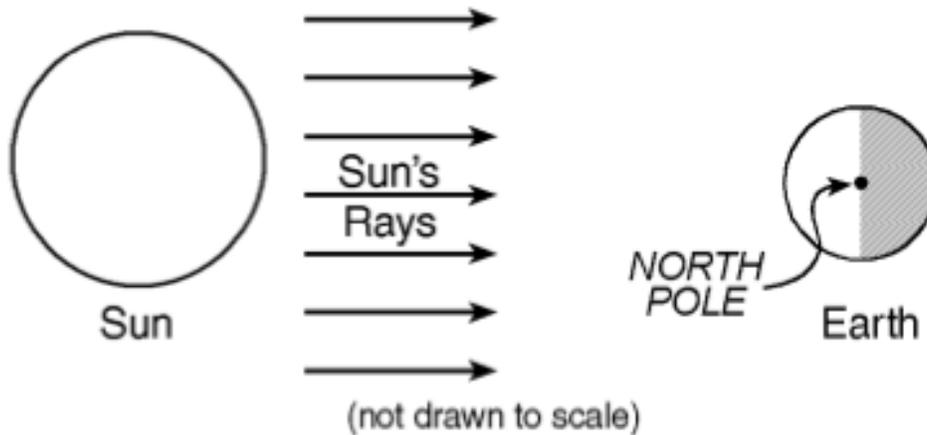


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34. On the diagram of the area of sand dune development below, draw a sketch showing the general sideview of a sand dune formed by a wind blowing in the direction indicated. Your sketch should clearly show any variations in the slope of the sides of the dune.



35. The diagram below represents the Sun and Earth as viewed from space on a certain date.



Draw an arrow on the diagram above that shows the Earth motion that causes surface ocean currents and surface winds to curve (Coriolis effect).